UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/528,083	03/17/2000	Dave Genovese	MATP-592US	4196

23122 7590 07/09/2003

RATNERPRESTIA
P O BOX 980
VALLEY FORGE, PA 19482-0980

EXAMINER
SLOAN, NATHAN A

ART UNIT	PAPER NUMBER
2614	6

DATE MAILED: 07/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/528,083	GENOVESE ET AL.	
	Examiner	Art Unit	
	Nathan A Sloan	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 April 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Applicant's arguments filed 4/14/03 have been fully considered and have been found to be persuasive in part. Applicants arguments regarding claims 1, 6, 9, and 10 have not been found to be persuasive, but arguments regarding claims 2-5 and 7-8 have been found to be persuasive.

With respect to claim 1, applicant asserts that Reitmeier's teachings do not correspond to "a comparator, configured to compare the measure of amplitude ... and change a value in a channel map data structure." Reitmeier was not relied upon for these teachings, see previous response to claim 1 stating that Limberg teaches the claimed amplitude detector and comparator. Applicant then contests official notice regarding scanning a frequency range, obtaining amplitudes, and comparing the determined amplitudes to threshold values. This appears to be in response to examiners statement that "it is well known in the industry to .." perform the contested operations. However, no Official Notice was taken. In the following sentence (page 3 of office action mailed 1/15/03), the examiner clearly states "To these means, Limberg teaches ..." and shows support for the claimed subject matter in Limberg using both figure and column references. Correspondingly, no reference is required in response to applicants inappropriate traversal to an alleged Official Notice.

Applicant next addresses the Limberg reference, asserting that no method of a method to determine if any television signal is present at a given frequency nor a method by which to derive a channel map corresponding to the output of a comparator coupled to a threshold detector is taught. Limberg was not relied upon for teachings of a channel map. Furthermore, no

mention of automatically determining if a "television signal is present at a given *frequency*" is recited in claim 1, rather, a tuner is provided along with an amplitude detector to determine an *amplitude*, followed by a comparator to compare stored and detected *amplitudes*. If applicant desires claims 1 or 6 (corresponding method) to include a limitation of detecting amplitudes at a plurality of frequencies throughout a scanned range of frequencies, then such a limitation should be supplied. However, claim 6 merely recites tuning to a frequency, detecting, and comparing an amplitude. No limitation of automatically scanning a plurality of frequencies is claimed. This difference is important because, as applicant pointed out (see page 10), art reading on "updating a scan list in response to a user input" reads upon the presently claimed invention (see Reitmeier in view of Limberg response).

In response to applicant's adequate traversal of "Official Notice that is notoriously well known in the art to update channel maps based on the output of a comparator that determines if a channel is offered," examiner supplies Kim et al. (6,405,372) which teaches in column 3, lines 53+ that each channel is checked sequentially and a microprocessor 116 (comparator) compares stored EPG information to newly determined EPG information and updates the EPG correspondingly. In this manner, Kim also meets the traversal of "Official Notice that it is notoriously well known in the art that building a channel map involves periodic scanning all possible frequencies that may be tuned to" by scanning all possible frequencies when the receiver is turned on (col. 3, lines 41-43).

Applicant then asserts that Reitmeier and Limberg "are not in the same field of endeavor as the subject invention or each other," and attempts to establish reasons supporting this. Examiner disagrees. Both Reitmeier and Limberg are inventions relating to tuning techniques

associated with digital television reception, and the presently claimed invention is, as recited in independent claims 1 and 6, a system and method "for deriving a channel map for a digital television receiver."

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicant addresses similar arguments in response to claim 4 as previously discussed which the examiner feels have been fully covered as noted above, and in consideration of previously cited and newly relied upon Patel et al.

Applicant's arguments directed measuring noise and changing of threshold values based on measured values in light of previously relied on Sakashita, filed 4/14/03, with respect to the rejection(s)of claim(s) 2-5 and 7-8 and under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made regarding noise detection and varying a threshold value, based on previously cited Patel et al. (6,124,898).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 6, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reitmeier (6,118,498) in view of Limberg (6,445,425), and in further view of Kim et al. (6,405,372).

Reitmeier teaches a channel scanning method used to reduce latency in the time required to present a selected channel to a user for viewing. Two tuners are used to simultaneously identify a selected channel frequency for the viewer, and to maintain an updated channel map in order to allow fast program tuning.

With respect to claims 1 and 6, the claimed "apparatus for deriving a channel map for a digital television receiver" is taught by Reitmeier as seen in Figure 1. The claimed "processor including a channel map data structure" is met by the Controller 70 containing CPU 74, claimed processor, with memory 76 containing Scan List 150, claimed channel map. As taught in column 3, lines 38-43, the claimed tuner, controlled by the processor, to tune to a channel and provide a signal having amplitude is met by the tuner 10A, controlled by the Controller 70 containing CPU 74 through link labeled "TA." The signal having amplitude, as claimed, is received received from RF input 5. The claimed "amplitude detector coupled to the tuner to provide a measure of the amplitude of the tuned television signal" is not explicitly taught by

Reitmeier. Reitmeier teaches in column 4, lines 27-31 that channel scanning or changing is used to provide rapid channel acquisition and in column 6, lines 37-40 that frequency drift correction parameters may need to be stored for correction. Examiner notes that it is well known in the industry to scan a frequency range, obtain amplitudes, and compare the determined amplitudes to threshold values as claimed in order to detect television signals. To these means, Limberg (6,445,425) teaches an amplitude detector 24 coupled to a threshold detector 25, which performs the functions of the claimed comparator, in Figure 1. As taught in column 10, lines 50-57, the threshold detector determines if the detected amplitude exceeds a prescribed threshold value in order to determine if a signal is a digital television signal. If the threshold value is exceeded, as claimed, a signal is sent and the ATF signal selector 23 performs Automatic Fine Tuning of the signal. If the threshold value is not exceeded, then the AFT will not perform fine tuning because the signal is not detected, and therefore the threshold detector 25 will have a second value, as claimed, that indicates a lack of signal. It would have been obvious for one skilled in the art at the time of the invention to modify the frequency scanning methods taught by Reitmeier to include a comparator for comparing detected amplitudes to a predetermined threshold to determine the presence of signals as taught by Limberg in order to store an accurate list of programs available for selection in memory.

Furthermore Reitmeier, does not explicitly teach the claimed "response to the output signal of the comparator having the first value, to change a value in the channel map data structure to indicate a specified channel is received by the DTV receiver." To these means, Kim et al. (6,405,372) teaches in column 3, lines 52+ that each channel is checked and a microprocessor 116 (comparator) compares stored EPG information to newly determined EPG

information and updates the EPG correspondingly. Column 4, lines 1-12 further teaches that this may be part of "an automatic channel checking function that automatically checks every channel." It would have been obvious for one skilled in the art at the time of the invention to modify the methods for scanning channel frequencies taught by Reitmeier and Limberg by updating the channel map as taught by Kim to reflect channels offered in order to provide viewers with efficient tuning that provides fast display of programming.

With respect to claims 9 and 10, the claimed periodic repeating of frequency scanning and detection to build a channel map "for all possible channel frequencies that may be tuned by the DTV receiver" is not explicitly taught by Reitmeier. Kim et al. (6,405,372) teaches automatically sequentially checking channels when a receiver is turned on to maintain an up-to-date channel map. It would have been obvious for one skilled in the art at the time of the invention to modify the channel scanning techniques taught by Reitmeier by scanning for all possible frequencies in order to build a complete, accurate channel map in memory.

3. Claims 2-5, and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reitmeier, in view of Limberg, in further view of Kim et al. (6,405,372) and Patel et al. (6,124,898).

With respect to claim 2 and 7, the claimed demodulator to demodulate a tuned signal provided by a tuner is taught by Reitmeier with demodulator 15A coupled to tuner 10A. The claimed processor containing "a user interface through which a user may cause the tuner to tune to a channel frequency indicated as being received by the DTV receiver in the channel map" is taught by Reitmeier with the User Input of Figure 1, taught in column 2 lines 63-67 and column 3 lines 1-6 to provide controls signals to Controller 70, through means such as a remote control,

claimed interface. The control signals are taught to include commands such as changing a channel, claimed tuning to a channel frequency. The claimed monitoring of the demodulator output signal to "determine if the baseband signal is present and for adjusting the threshold value if the baseband DTV signal is not present" is not explicitly taught by Reitmeier. Limberg teaches an AFT signal selector 23 that is used to perform fine tuning of a selected signal based on a determined threshold value as noted above. The claimed adjustment of a threshold value "if the baseband DTV signal is not present" is not taught by Limberg, however, Patel teaches in column 12, lines 27-41 that a threshold detector 49 may supply a varying control signal to condition a signal responsive to detection of a present or absent digital television signal. It would have been obvious for one skilled in the art to modify the methods taught by Reitmeier and Limberg by performing adjustment of the threshold value to as taught by Patel in rapidly detect DTV signals.

With respect to claim 3, the claimed demodulator providing a measure of noise and monitoring the output signal and adjusting the threshold value based on measured noise is not taught by Reitmeier. Reitmeier does teach, however, frequency tuning and correction of signal errors by using correction parameters in column 6, lines 34-42. These tuning methods are invoked as variable information and accounted for when a channel is selected, and therefore demodulated. As seen in Figure 1, the Aux Demux and Process unit 30 is coupled to the controller 70, and falls after the demodulator 15A to perform frequency adjustments as noted above. As noted above, Patel "means for adjusting the threshold value" in column 12, lines 28-51. Patel does not explicitly teach obtaining a measure of estimated noise and adjusting the threshold value based on the measure of estimated noise. Patel does teach of ghost cancellation

and convergence of weighting coefficients to achieve desired values rapidly (col. 3, lines 29-37). Ghost imaging or co-channel interference (col. 7, lines 47-50 and col. 12, lines 1-28), claimed "noise," is detected and utilized as a measure to "adjust the threshold value based on the measure of estimated noise," as claimed. It would have been obvious for one skilled in the art to modify the methods taught by Reitmeier and Limberg by performing adjustment of the threshold value to reduce noise as taught by Patel in order to provide the best signal to the viewer.

With respect to claim 4, the claimed apparatus "apparatus for deriving a channel map for a digital television receiver" is taught by Reitmeier as seen in Figure 1. The claimed "processor including a channel map data structure" is met by the Controller 70 containing CPU 74, claimed processor, with memory 76 containing Scan List 150, claimed channel map. As noted above, the claimed processor contains a user interface through which a user may select a channel from among a plurality of channels, claimed selection of a frequency from among the channel frequencies, contained within the scan list 150, claimed channel map. The claimed first tuner is met by the tuner 10A which is taught in column 3, lines 38-43, controlled by the processor, to tune to a channel and provide a signal. The claimed "second tuner controlled by the processor in response to a desired frequency entered by the viewer through the user interface to provide a second tuned television signal" met by tuner 10B being controlled by Controller 70; this is explained in column 3, lines 49-55. Reitmeier also teaches a demodulator coupled to the second tuner in the demodulator 15B of Figure 1, as claimed. The signal having amplitude is received from RF input 5. The claimed "amplitude detector coupled to the first tuner to provide a measure of the amplitude of the tuned television signal" is not explicitly taught by Reitmeier. Reitmeier teaches in column 4, lines 27-31 that channel scanning or changing is used to provide

rapid channel acquisition and in column 6, lines 37-40 that frequency drift correction parameters may need to be stored for correction. Limberg (6,445,425) teaches an amplitude detector 24 coupled to a threshold detector 25, which performs the functions of the claimed comparator, in Figure 1. As taught in column 10, lines 50-57, the threshold detector determines if the detected amplitude exceeds a prescribed threshold value in order to determine if a signal is a digital television signal. If the threshold value is exceeded, as claimed, a signal is sent and the ATF signal selector 23 performs Automatic Fine Tuning of the signal. If the threshold value is not exceeded, then the AFT will not perform fine tuning because the signal is not detected, and therefore the threshold detector 25 will have a second value, as claimed, that indicates a lack of signal. It would have been obvious for one skilled in the art at the time of the invention to modify the frequency scanning methods taught by Reitmeier to include a comparator for comparing detected amplitudes to a predetermined threshold to determine the presence of signals as taught by Limberg in order to store an accurate list of programs available for selection in memory.

Furthermore Reitmeier, does not explicitly teach the claimed changing a value in the channel map based on a the lack of a signal being received by the receiver and increasing the threshold value if the selected baseband signal is not provided. Kim et al. (6,405,372) teaches in column 3, lines 52+ that each channel is checked and a microprocessor 116 (comparator) compares stored EPG information to newly determined EPG information and updates the EPG correspondingly. Column 4, lines 1-12 further teaches that this may be part of "an automatic channel checking function that automatically checks every channel." It would have been obvious for one skilled in the art at the time of the invention to modify the methods for scanning

channel frequencies taught by Reitmeier and Limberg by updating the channel map as taught by Kim to reflect channels offered in order to provide viewers with efficient tuning that provides fast display of programming. Furthermore, as noted above Patel et al. (6,124,898) teach changing a threshold value as claimed in order to detect and provide the best signal possible in column 11, lines 40-58. It would have been obvious for one skilled in the art to modify the methods taught by Reitmeier in view of Limberg and Kim by performing adjustment of the threshold value as taught by Patel in order to provide allow faster tuning of a DTV signal.

With respect to claim 5, the second tuner providing a measure of estimated noise received in the signal, and adjusting the threshold value based on the measure of estimated noise as claimed is not explicitly taught by Reitmeier. Reitmeier does teach, however, frequency tuning and correction of signal errors by using correction parameters in column 6, lines 34-42. These tuning methods are invoked as variable information and accounted for when a channel is selected, and therefore demodulated. As seen in Figure 1, the second tuner 10B is coupled to the Aux Demux and Process unit 30 and controller 70, which performs frequency adjustments as noted above. As noted in response to claim 3 above, Patel teaches adaptive threshold values in response to detected noise estimations. It would have been obvious for one skilled in the art to modify the methods taught by Reitmeier and Limberg by performing adjustment of the threshold value to reduce noise as taught by Patel in order to provide the best signal to the viewer. Furthermore, it would have been obvious to perform these features in the second tuner of Reitmeier in order to provide faster, dual-tuning of DTV signals.

With respect to claim 8, the claimed measuring of noise and adjusting the threshold value based on measured noise is not explicitly taught by Reitmeier. Reitmeier does teach, however,

frequency tuning and correction of signal errors by using correction parameters in column 6, lines 34-42. These tuning methods are invoked as variable information and accounted for when a channel is selected. As seen in Figure 1, the Aux Demux and Process unit 30 is coupled to the controller 70, and falls after the demodulator 15A to perform frequency adjustments as noted above. Patel et al. teaches the claimed obtaining a measure of estimated noise and adjusting the threshold value based on the measure of estimated noise as noted in response to claimes 3 and 8 above. It is the position of the examiner that the presence of noise resulting in a frequency drift away from a standard comprises the claimed non-baseband signal. It would have been obvious for one skilled in the art to modify the methods taught by Reitmeier and Limberg by performing adjustment of the threshold value to reduce noise as taught by Patel in order to provide the best signal to the viewer.

Furthermore, Reitmeier does not explicitly teach the claimed changing a value in the channel map to indicate that "a channel in the channel map does not correspond to a DTV channel." As noted above with references Limberg and Patel, the frequency scanning and tuning aspect is known to involve the step of changing a threshold for varying levels of noise. It therefore would have been obvious for one skilled in the art at the time of the invention to modify the methods for storing data in the channel map taught by Reitmeier by updating the channel map to reflect that a signal is not a baseband DTV signal in order to list only those channels which are within the DTV range and may be presented to viewers.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

5. Eyer (6,483,547) – updating a channel map.

Oh (6,421,099) – automatic frequency tracking with lock signal detection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan A Sloan whose telephone number is (703)305-8143. The examiner can normally be reached on Monday-Friday from 8:00AM to 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller, can be reached on (703) 305-4795. The fax phone number for the organization where this application or proceeding is assigned is (703)308-5399.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-3900.

JOHN MILLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600